

IN THE CLAIMS

1. (Amended) A method of determining the range between a target plane and a monitoring plane comprising the steps of:  
generating model data corresponding to selected parameters describing flight path characteristics of the target plane;  
a1 passively collecting actual flight path data of the target plane;  
generating an error measurement from said model data and said actual flight path data;  
adjusting said model data to reduce said error measurement;  
and  
calculating the range from said model data.

10. (Amended) A method of determining the range between target plane and a monitoring plane comprising the steps of:  
generating model data corresponding to selected parameters describing flight path characteristics of the target plane;  
a2 passively collecting actual flight path data of the target plane;  
generating an error measurement from said model data and said actual flight path data;  
calculating a perturbation model, said perturbation model indicating a change in said model data which reduces said error measurement;  
adjusting said model data in accordance with said perturbation model; and  
calculating the range from said model data.

15. (Amended) A method of determining the range between a target plane and a monitoring plane comprising the steps of:  
a3 passively collecting actual flight path data of the target plane;

generating model data corresponding to selected parameters describing flight path characteristics of the target plane;

Q3 adjusting the flight path of the monitoring plane in a direction optimizing ranging performance;

generating an error measurement from said model data and said actual flight path data;

adjusting said model data to reduce said error measurement; and

calculating the range from said model data.

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20. (Amended) Apparatus for determining the range between a target plane and a monitoring plane comprising:

a passive sensor [receiver] for collecting actual flight path data of the target plane;

Q4 a processing device for performing arithmetic calculations;

said processing device operable to generate model data corresponding to select parameters describing flight path characteristics of the target plane;

said processing device further being operable to generate an error measurement from said model data and said actual flight path data and to adjust said model data to reduce said error measurement in order to calculate the range from said model data.

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30. (Amended) An apparatus for determining the range between the target plane and a monitoring plane comprising:

Q5 means for passively collecting actual flight path data of the target plane;

means for generating model data corresponding to selected parameters describing flight path characteristics of the target plane;

means for generating an error measurement from said model data and said actual flight path data;